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ON AN INLAND BREEDING HAUNT OF *LARUS CANUS*.

By Robert Warren.

On the 17th May, accompanied by my friends Dr. S. Darling and his brother, Mr. James Darling, of Ballina, I visited a breeding haunt of the Common Gull, situated on some small loughs about ten miles from the sea, the same distance from Ballina, and about three miles from the little town of Crossmolina, Co. Mayo. Driving to Glenmore, we put up the horse, and employed a boy to guide us to the loughs. In about half an hour's smart walking we reached a wide expanse of flat wet moor, having many little loughs in the low-lying parts of it, and in these loughs islands or clumps of turf covered with heath or coarse grass.

On reaching the first of the loughs we observed a Gull resting on a clump in the middle, but seeing only a solitary bird, which flew off at our approach, we did not suppose there was a nest there. Dr. Darling and I went on ahead; James Darling remaining to take another look round, and wading out to the clump of turf found a nest of dried grass on it, containing three eggs. This "find" was most encouraging, for not seeing any Gulls about we were beginning to fear that our journey would prove in vain. We walked on to a group of loughs about a quarter of a mile farther on, and there we saw two Gulls resting on clumps, and in a few minutes we had three pairs of the Common Gull circling around us, plainly showing by their anxious movements that three nests at least must be somewhere about the islands of the lough. Unfortunately for us, owing to the great depth of the black soft mud forming the bottom of these loughs, it was quite impossible to wade out to the islands, except where the roots of the water-plants supported our feet, but the plants were too scarce to be available. While walking around this lough, vainly seeking a passage, we disturbed a pair of Dunlins, but though we made a long and careful search for the nest, were not successful in finding it. Although so far fortunate in discovering a breeding haunt of the Common Gull, we had not found the particular lough reported to me of which we had come in search. We again questioned the boy, but he knew of no other lough, nor of one where Gulls built on the tree-stumps of an old submerged forest, as had been described to me. Finding the boy therefore of no further use as a guide, we decided upon going in different directions over the bog, and, while time allowed, persevere in searching for the missing Lough-na-Crumpawn, "the lough of the stumps."

Dr. Darling and I then proceeded to examine some small pools that appeared about a quarter of a mile off, at the same time James Darling and the boy went off in the opposite direction to a little ridge about twice that distance away, from which they could obtain a better view over the surrounding bog, and perhaps discover the particular lough of which we were in search. Soon we heard the boy whistle, and saw James Darling run to meet him (we afterwards learnt that just then he had come upon a Dunlin's nest with four eggs). We then saw them walk to the top of the ridge, and then James Darling immediately whistled, and waving his hat to us disappeared over the ridge. Not seeing him return, we concluded that he must have discovered the lough; so as soon as we finished exploring those we were at, without finding anything, we hastened after him, and on reaching the top of the ridge we saw to our delight, in a hollow about half a mile away, the lough we were in search of, easily identified by the tree-stumps studding its surface. A number of Gulls were flying over the head of our friend, who was wading out through the muddy water to where the Gulls had nests.

On reaching the water we soon had eight pairs of *Larus canus* flying around us, and found eight nests composed of dried grass on the tree-stumps; James Darling visited seven of these, and six contained eggs; the eighth he was unable to reach, owing to the depth of the mud; nor would he have reached any of them had he not made use of two pieces of board to prevent his sinking. We expected to have seen a larger colony of Gulls, for there was ample space, even on the last lough, for the nests of many more birds; but, from what we heard from a man who was cutting turf beside the water, there was the usual number of birds there.

In the summer of 1855, when visiting Lough Talt, in the Ox Mountains, Co. Sligo, I saw a few pairs of the Common Gull that had bred on two small islands in the lough, and found the young just fledged, and in one nest an addled egg. Shortly afterwards, however, that place was deserted by the Gulls as a breeding haunt, in consequence of boats being placed there for trout-fishing; and as the lough was often fished, especially in May, the birds were never undisturbed in the nesting season.

I never saw the bogs so bare of birds, for during the long time we walked over them, visiting a number of loughs, not a Snipe was seen; only one Grouse, a Curlew, and the pair of Dunlins already mentioned, which I think must have been the owners of the nest found. It was certainly rather early for the Dunlins to pair, for the next day I saw a flock of over two hundred individuals on the shore here, and nearly all in summer plumage.

ORNITHOLOGICAL NOTES FROM NATAL.

By Majors E. A. Butler and H. W. Feilden, and Capt. S. G. Reid.

(Continued from p. 212.)

Drymœca affinis (Smith), Tawny-flanked Grass Warbler.—A single specimen, male, obtained by Reid at the Umgeni River, near Durban, on the 26th December.

Drymœca hypoxantha (Sharpe), Saffron-breasted Grass Warbler.—Not uncommon in the Newcastle district, where we all obtained specimens. It is a conspicuous bird, in spite of its shy habits. We usually found it in the neighbourhood of water, especially in bushes among rocks and high grass.

Cisticola natalensis (Smith), Natal Fantail Warbler.—Reid shot two specimens of this Grass Warbler—one, a female, at the edge of some dense bush, near Durban, on the 12th August, and another, a male, in the "Town Bush," near Pietermaritzburg, on the 31st August.

Cisticola curvirostris (Sund.), Brown Fantail Warbler.—Two males obtained hy Reid near the camp at Richmond Road, near Pietermaritzburg, on the 8th December. Fauces blackish. The species appeared to be common in the long coarse grass below the camping ground.

Cisticola tinniens (Licht.), Le Vaillant's Fantail Warbler.—Common in the neighbourhood of Newcastle, along the rivers and streams; a restless and noisy bird. Reid found a nest on the 25th October, containing two young birds just hatched, and an addled egg, pinkish white, with spots of a darker pink collected at the obtuse end; and a nest full of clamorous young birds on the following day. Both these were placed in the centre of a tuft of coarse grass growing on the bank of the River Incandu, and were discovered by watching the old birds; they were of the usual Cisticoline construction, purse-shaped, and supported by the grass-stems.

Cisticola chiniana (Smith), Larger Grey-backed Fantail.—Very common near Newcastle, where we obtained numerous specimens in May, June, and July. It frequents long grass in swampy ground, and by the side of streams.

Cisticola aberrans (Smith), Smith's Fantail Warbler.—Two specimens were procured by Reid—a male near Camperdown Station, between Pietermaritzburg and Pinetown, on the 15th December, and another at Richmond Road Camp.

Cisticola cisticola (Temm.), Common Fantail Warbler.—Numerous on the "veldt," and a most conspicuous bird in spite of its diminutive proportions. It frequents the long grass, and betrays the greatest alarm on the approach of an intruder—flying round him with a jerky, spasmodic flight, and making a curious snapping noise, apparently with its wings. This species is pronounced by Messrs. Finsch and Hartlaub, and Mr. R. B. Sharpe, to be specifically inseparable from the common Fantail Warbler of Europe.

Sphenœacus natalensis (Shelley), Natal Pointed-tailed Grass-Warbler.—This species has been separated, as a new one, from *S. africanus* of Cape Colony, from which it differs in the almost uniform rufous-buff colouring of the under surface of the body, and in the absence of black shaft-stripes to the upper and under tail-coverts. It is common in the vicinity of Newcastle, frequenting scrubby bush and long grass by the sides of the rivers and water-courses, from which it is very hard to dislodge it after its first weak flight. Specimens vary a good deal in size. Iris reddish-brown; legs, feet, and bill lavender.

Apalis thoracicus (Shaw), Bar-throated Warbler. — One obtained by Feilden and Reid on the 15th May, in a "kloof" on the Drakensberg mountains, near Newcastle. It was creeping about like a mouse along the leafy branch of a tree. Butler also found it not uncommon in the same locality, and obtained several specimens. He remarked that the note is loud for the size of the bird, and peculiar, so that, once having heard it, it is impossible to mistake it. Iris pale yellowish white; legs and feet pinkish flesh (B).

Bradypterus brachypterus (Vieil.), Stripe-throated Reed Warbler.—Butler found this species not uncommon about Richmond Road, and shot a female developed for breeding at Karkloof on the 16th November. It frequents long grass and rushes growing in swamps or by the side of streams. He also noticed it occasionally in the swamps about Newcastle, and in other localities on the march down country during the wet season.

Bradypterus gracilirostris (Hartl.), White-breasted Reed Warbler.—Not uncommon in the thickest reeds in the "vleys" near Newcastle in September and October, at which season it breeds. It is a noisy bird, betraying its presence by its loud musical notes. We had hard work, however, to obtain specimens, as it is very shy on the approach of an intruder, creeping about like a mouse among the stems of the reeds, and keeping to the densest parts. The note is almost as rich and powerful as that of the Nightingale. A hen shot on the 27th October was undoubtedly sitting. Bill brown above, flesh below; legs and feet dark plumbeous-olive; iris brown.

Acrocephalus arundinaceus (Linn.), Great Reed Warbler.—The Great Reed Warbler from Natal is now pronounced inseparable from the European bird, *A. turdoides* (Meyer) = *A. arundinaceus* (Linn.) The only specimen obtained was a pale-coloured variety shot by Reid at Richmond Road, near Pietermaritzburg, on the 7th December. He saw another the same day, but could not secure it. Male, immature; iris light brown;

legs and toes flesh-colour; claws brown; bill bluish horn-colour; lower mandible flesh-colour at base (R). Butler also noticed it in this locality.

Acrocephalus bœticatus (Vieil.), South African Reed Warbler. —Two specimens, both males, shot by Reid on the Incandu River, near Newcastle, on the 25th October. Several others were seen. They were uncommonly lively, flitting to and fro among the reeds at the water's edge, singing lustily at intervals.

Phylloscopus trochilus (Linn.), European Willow Warbler.— Several observed and one shot by Reid in a patch of thick trees about three miles south of Newcastle, on the 28th October. He also fell in with a small party of three lively little birds close to Camperdown Station, on the 15th December, and obtained a specimen. Both these were males, showing no signs of breeding; it is very doubtful if the species does breed in its South African winter-quarters.

Dryodromas fulvicapillus (Vieil.), Tawny-headed Bush Warbler. —Not an uncommon bird; but the only specimens obtained were one at "Guinea Fowl" Kopje, near Ladysmith, in August, and one on the banks of the Tugela, near Colenso, on the 21st November; both shot by Reid.

Sylvietta rufescens (Vieil.), Short-tailed Bush Warbler.— "Only one specimen met with, shot near Ladysmith on the 18th August by Lieut. Harkness, of the Welsh Regiment, who kindly gave it to me in the flesh next day" (R).

Nectarinia famosa, Malachite Sun-bird.—Very abundant in the Newcastle district, where it is by far the commonest species of Sun-bird. Fielden discovered it wintering in the Drakensberg kloofs, and obtained specimens there in July. In October and November they were scattered in pairs all over the country, and numerous examples were obtained in all stages of plumage up to the full summer livery. It was abundant at Ladysmith in August, so perhaps it winters in sheltered kloofs there as well. Common at Richmond Road in December, many beautiful males falling victims to "Tommy Atkins" during the time the troops were encamped there (R).

Cinnyris afer (Linn.), Greater Double-collared Sun-bird.— Found commonly in the Drakensberg kloofs in company with the succeeding species. It evidently winters there, for specimens were obtained in May and June. Reid obtained one near Ladysmith in

August, and saw several others there. About the same time (August 21st), Butler found it breeding in the Drakensberg, near Newcastle. The nest he describes as very similar to many of the Indian "Honey-suckers," consisting of a pear-shaped ball of dry grass, vegetable fibres, cobwebs, &c., very neatly constructed and suspended by the small end from the top of a good-sized green shrub about ten feet from the ground. The entrance was at one side, with a portico over it; it was warmly lined with feathers. Unfortunately this nest was blown down in a snow-storm before the eggs were laid. One can hardly realise the fact of birds of this genus building with two feet of snow lying on the ground, but it is nevertheless a fact (B).

Cinnyris chalybæus, Lesser Double-collared Sun-bird.—Very common in the Drakensberg, near Newcastle, where we obtained examples in mid-winter (May and June), and where it breeds. Seen in small flocks, or rather assemblies, on flowering trees in the Town Bush at Maritzburg, on 31st August.

Cinnyris gutturalis (Linn.), Scarlet-chested Sun-bird.—"I was shown a stuffed specimen at Maritzburg in August, which my informant had himself shot in the 'Town' Bush in summer; he stated that the species was not uncommon there in the hot months" (R).

Cinnyris amethystinus (Shaw), Amethyst Sun-bird.—Not uncommon from Durban as far up country as Ladysmith, but not obtained beyond. At the latter place a male was killed by a boy with a catapult. It was common at Colenso in November, and at Durban both in August and December. Reid obtained some lovely specimens at these two places.

Cinnyris verreauxi (Smith), Mouse-coloured Sun-bird.—A female shot in the bush between Sydenham and Durban on the 12th August (R).

Cinnyris olivaceus (Smith), South African Olive Sun-bird.—Reid obtained a female in the bush near Durban on the 12th August.

Anthreptes collaris (Vieil.), Natal Collared Sun-bird.—Specimens obtained in the bush near the mouth of the Umgeni (Durban) in December (R).

Zosterops capensis (Sund.), Cape White-eye.—A common species, universally distributed throughout the colony. Many specimens were obtained in the kloofs of the Drakensberg, near

Newcastle, and it was also shot near Durban. It was usually found in small parties. "Legs and feet lavender" (B).

Parus niger (Vieil.), Southern Black-and-White Titmouse.—A small party seen in a bushy "donga" at Camperdown, near Pietermaritzburg, and one specimen, female, obtained by Reid, on the 15th December.

Pachyprora capensis (Linn.), Cape Flycatcher.—Universally distributed and common in every wooded kloof we explored. Specimens were obtained from May to August at Newcastle, and in August also at Durban. Iris deep golden or orange-yellow. These birds are of a very affectionate disposition, and on one occasion when Butler shot a male bird, the female, instead of being driven away by the report of the gun, flew down with it as it fell lifeless to the ground, and kept hopping around it, evincing the greatest anxiety and refusing to leave it till its mortal remains were consigned to the collecting-basket.

Pachyprora molitor (Hahn & Küster), White-flanked Flycatcher.—Not so common as the preceding. Reid obtained a male specimen at Ladysmith on the 21st August, seeing several others, and another male at Colenso on the 21st November. We did not meet with this species in the kloofs of the Drakensberg, near Newcastle.

Muscicapa grisola (Linn.), European Spotted Flycatcher.—Several were seen by Reid in the bush at Blaauw Krautz River, between Colenso and Estcourt, and one obtained on the 23rd November.

Stenostira scita (Vieil.), Fairy Flycatcher. — This is the *Platysteira longipes*, Swains., of Layard's first edition of the 'Birds of South Africa.' We met with it frequently in the kloofs at the foot of the Drakensberg Mountains in July, August, and September, and obtained several specimens.

Parisoma subcæruleum (Vieil.), Red-vented Flycatcher.—"One shot by Lieut. Harkness, of the Welsh Regiment, near Ladysmith, on the 18th August, and given to me" (R).

Parisoma layardi (Hartl.), Layard's Flycatcher.—An immature male obtained by Reid, in the thick bush between Durban and the Umgeni River, on the 26th December.

Terpsiphone perspicillata (Swains.), South African Paradise Flycatcher.—Obtained by Butler in the Drakensberg kloofs, near Newcastle, in October. Very common towards the coast, Butler meeting with it (nesting) at Colenso in November, and Reid at Camperdown in December. Measurements as follows:—Male; length, 8 in., wing, 3⅜ in.; tail, 3¾ in.; bill from front, ½ in.; from gape, ⅞ in.; expansion of wings, 9¾ in. The total length and length of the tail are exclusive of the long tail-feathers, which were shot away. Bill and eyelids bright blue; legs and feet lavender-blue; iris dark brown; extreme tip of upper mandible blackish. Butler's notes of the nesting of this species are as follows:—"Found two nests near Colenso on the 13th November, one containing three young ones ready to fly, the other a single young bird that flew out of the nest as I approached it. Both nests were exactly alike, neat little cups composed of dry grass with lichen attached exteriorly and placed upon a thin stem or fork of a low bough, being bound to it by cobwebs. about five feet from the ground, by the side of a stream running through a wood. The old birds evinced great excitement and anxiety whilst the nests were being examined" (B).

Cryptolopha ruficapilla (Sund.), Yellow-browed Flycatcher.—Butler found this species not uncommon in the kloofs on the Drakensberg, near Newcastle, and obtained several good specimens in August. It frequents the thick bush, and has much the same habits as *Zosterops capensis*, with which species it often associates, flitting from tree to tree in the same restless manner, searching the branches in quest of insects. On one occasion he observed a party of these birds, in company with a few "White-eyes," in the greatest possible state of excitement, mobbing a small Scops Owl which was seated motionless on a branch, fast asleep, though with one eye, as usual, half open, and looking for all the world like the stump of an old broken branch. In all probability it is migratory, not having been noticed before the middle of August. Soft parts as follows:—Iris dark brown; legs and feet olive-grey; lower mandible fleshy yellow (B).

Petrochelidon spilodera (Sund.), Prince Alfred's Swallow.—This is the *Hirundo lunifrons* (Sav.), of Layard's first edition, and a very numerous species in the Newcastle district. We found many colonies breeding near Newcastle in October. The nests are large globular mud structures, very similar to those of *Chelidon urbica*, with a hole near the top, and warmly lined with feathers matted together. As a rule they are built under cliffs and rocks overhanging small streams, from one to nine feet above the surface of the water, and are packed closely together. In some instances the entrance-hole slightly projects, but never so much as to form a passage, as in the nests of *Hirundo cucullata.* In a colony at the Ingagane River, visited by Reid, there were as many as two hundred nests together in one clump, and several smaller ones close by, quite four hundred nests in all, while in others there are not more than fifteen or twenty. Three eggs appear to be the regular number, for in one nest only did we meet with four. The eggs, which vary much in size, are white, rather finely spotted and blotched with reddish brown or chestnut and inky purple, the markings being rather more numerous towards the obtuse end. We took them in October and November. The birds were first noticed about their nesting-places at the end of August. They appear to resort to the same place to breed every year. It would appear that they make use of the "daaga," or cement-like mixture of which the ants form their hills, in the construction and repairs of their nests; one was shot by Reid, sitting on the top of a broken ant-hill with its bill full of this material, which from its binding properties is collected and used as mortar throughout the upper districts of the colony. "Iris dark brown; bill, legs and feet dusky" (B).

Cotyle cincta (Bodd.), Brown-collared Sand Martin.—First noticed in the Newcastle district early in October, after which it was fairly abundant, frequenting river-banks and "vleys." It has a very noticeable flight, less jerky and more vigorous than that of its congeners. Butler's measurements of a fine female specimen shot by Reid, when the two were duck-shooting at "Spoonbill" Vley, near the Buffalo, are as follows:—Length 6·9 in.; wing, 5·25 in.; tail, 2·6 in.; bill, from front, 0·4 in.; from gape, 0·6 in.; expansion of wings, 14·4 in. Legs, bill, and feet dusky; iris dark brown. They appeared to be going to breed in November, in holes in the river banks, but we did not meet with any occupied nests. The length given in Layards's work, *viz.*, 5·9 in., is probably an error, as these birds do not appear to vary in size to any extent in either sex.

Cotyle fuligula (Licht.), Brown Sand Martin.—A familiar species throughout the year in the upper part of the colony, especially noticeable on rocky hill-sides in winter, hawking in straggling bodies for its food among the sheltered ravines. In such situations it also breeds, in October and November, fixing its shallow cup-shaped nest to the under side of a projecting rock or side of a cave, and laying three or four eggs, white, spotted with reddish brown chiefly at the larger end. The nest is made of mud, warmly lined with feathers. "They roost at night in caves, often congregating in large colonies and sitting huddled up together on the ledges in long rows or in a cavity of the rock" (B).

Cotyle paludicola (Vieil.), South African Sand Martin.—A permanent and most abundant resident in the neighbourhood of Newcastle. Two phases of plumage occur, as mentioned by Layard in his first edition; one with the under parts white, the other with these parts of a brownish colour like the rest of the plumage. We were unable to solve this question, but are inclined to the belief that the darker-coloured birds are immature. It probably breeds twice, for Feilden found a nest containing three incubated eggs in the bank of the Buffalo River, on the 6th August, and it was undoubtedly breeding in the clay banks of the rivers and streams near Newcastle, in October and November.

Hirundo rustica (Linn.), Chimney Swallow.—First observed in the Newcastle district by Butler and Reid on the 19th October. Much more numerous down country; large flocks seen both at Richmond Road and Durban.

Hirundo albigularis (Strickl.), White-throated Swallow.—Appeared at Newcastle early in September in numbers, and noted all the way to the coast. Numerous at Richmond Road in December. The nest is open, of a half-cup shape, built of mud, warmly lined with grass and a large quantity of feathers, and is placed on the under surface of rocks, usually over water. Eggs four, measuring 0·75 in. by 0·55 in., white, with small blotches and spots of reddish brown, most numerous towards the obtuse end. Nests were taken by Butler and Reid in October and November; one found by Butler was on a cliff about one hundred yards from the water on a sloping hill-side. When the nest is destroyed by accident or removed, the birds usually commence a fresh one on the same foundation within a few days. Reid took one on the 15th October, and on the 21st found a new nest ready for eggs in the same place.

Hirundo cucullata (Bodd.), Rousseline Swallow.—This Swallow visited the upper portions of the colony somewhat later than the preceding, not being recorded by us earlier than the 2nd October.

From this date it was extremely abundant, and was observed constructing its peculiar gourd-shaped nest in the verandahs of houses as well as in the wildest and most remote "krantzes" and ravines. No eggs were taken, though a nest was found, apparently ready for them, on the 11th November.

N.B. We were disappointed at not meeting with the Black Swallow, *Psalidoprocne holomelæna* (Sund.), in any part of the colony, as we had fully expected, on the strength of Mr. Ayre's experiences (quoted in the original edition of Layard's book), to find it common. This can hardly be the case, or we must have noticed it. Reid heard of it at Durban as having been seen there on Christmas Day, but did not meet with it himself.

Lanius collaris, Fiscal Shrike.—Extremely abundant everywhere, from Durban to the Transvaal, breeding in thick bushes. Some specimens obtained in the Newcastle district are larger (measuring 10 in.) than usual, and have the under parts *pure* white; but they have no claim to rank as anything more than an accidental form. Nests were found containing eggs in September, October and November. The eggs are of the ordinary Shrike type, not unlike those of *Enneoctornis collurio*. Butler shot two specimens carrying small field-mice in their claws like a hawk, and in one instance the mouse, although its head was battered in by blows of the Shrike's bill, was alive. Butler adds the following note:—"Found a nest near Newcastle containing four fresh eggs on the 9th September. It was a massive and well-built structure, placed in an orange tree in a garden, and about five feet from the ground, being composed externally chiefly of the stems of a species of white mildewed-looking herb intermixed with strips of rag, string, tufts of sheep's and goat's wool, a few feathers, &c., and well lined with grass roots, feathers, tufts of wool, and a few horse and cow hairs interwoven. Eggs of the usual *Lanius* type, whitish, with a conspicuous ring or cap of olive-brown and slaty grey confluent markings at the larger end, the markings on the rest of the egg sparse. Another similar nest, containing three fresh well-marked eggs, at Sundy's River on the 10th November. It was in a garden and placed in a fork on one of the outside boughs of an apple tree about eight feet from the ground." (B).

Lanius collurio (Linn.), Red-backed Shrike.—Specimens of this well-known bird were obtained by Reid at Blaauw Krantz

River and Weston (Mooi River) in November; it was common at Richmond Road, near Pietermaritzburg, and at Durban, in December.

Laniarius rubiginosus, Sund., Ruddy-breasted Bush Strike.—Butler obtained two specimens in a kloof on the Drakensberg, near Newcastle, in August, but it does not seem to be common in that part of the country. A female obtained by Reid in the bush, near Durban, on the 12th August.

Laniarius ferrugineus, Cuv., Greater Puff-backed Shrike.—Butler procured a few on the Drakensberg, near Newcastle. It is not very common, and strictly a woodland species, frequenting the densest bush. It is very shy, keeping out of sight as much as possible, and is usually found singly, except perhaps in the breeding season. A male shot in the "Town" Bush, near Pietermaritzburg, by Reid, on the 31st August. "The note is loud and rich, and not unlike some notes of the Indian Magpie, *Dendrocilta rufa*. Male: legs and feet light greyish plumbeous; bill dark blackish plumbeous, horny white on the terminal two-thirds of the upper mandible; iris blackish brown" (B).

Laniarius cubla (Lath.), Lesser Puff-backed Shrike.—An example of this was obtained near Ladysmith, in August, by Serjeant Williams, of the Welsh Regiment, and examined by Reid on the 19th of that month. Butler procured one also near Newcastle, in a kloof on the Drakensberg, in August, but it is not common according to our experience, and belongs to the forest tracts. Iris brilliant orange or golden yellow; legs and feet lavender; bill black" (B).

Laniarius gutturalis, Müller, Backbakiri Shrike.—Extremely common in the neighbourhood of Newcastle. Also numerous at Colenso, where it was nesting in November, and at Ladysmith. Not observed at Pietermaritzburg, though doubtless occuring there. A shy bird, though betraying its presence by its loud and not unmusical notes. Both male and female have the black collar in adult plumage. The eggs are lovely, but lose their beautiful colouring sadly when incubated; they are accurately described by Layard in his first edition. Both birds take part in sitting. Iris dark brown; bill blackish horn colour; legs and feet lavender colour, or plumbeous grey" (B).

Telephonus longirostris, (Swains.), Long-billed Bush Shrike.—Common in the bush between Durban and the Umgeni River, where it was doubtless breeding. Reid obtained two males there and saw several others. They were very noisy and restless, and came close to him, uttering a harsh scolding cry. Butler observed a Drongo Shrike in a densely wooded ravine about three miles north of Colenso, but unfortunately had no gun with him at the time. He thinks it was, in all probability, *Dicrurus musicus*, agreeing well with the description of that species in Layard's first edition. It was quite tame, and he watched it hawking for insects for several minutes close to him.

Corvultur albicollis (Lath.), White-collared Raven.—Widely distributed, though somewhat local. As many as fifty were frequently seen together on deserted camping-grounds at Maritzburg in April. Though by no means absent in the intervening districts, it was not met with in any great numbers on the march up country at that time of the year; the camp at Newcastle, however, seemed to have drawn together the scattered parties, for they were common there throughout the winter months. We were, unfortunately, unable to investigate their breeding habits, but it seems certain that they breed all along the Drakensberg in October and November, as Butler noticed several isolated pairs scattered about the hills at that season; and early in October, Reid came suddenly on a large number of them, paired but still gregarious, on the Zulu side of Rorke's Drift, which were evidently nesting there, in a steep "krantz."

Corvus scapulatus, Daud., White-bellied Crow.—Scattered throughout the colony, but not observed below Howick. Seen in small parties, keeping together; also in pairs. Note extremely guttural and hoarse, only to be compared to that of a frog with a bad cold! Nests in both trees and rocks. Reid took a nest in a "krantz" close to Newcastle, containing four eggs, on the 9th October; the old birds, nothing daunted, built another nest on a ledge of rock close by, and in twelve days one of them was sitting on a fresh clutch of eggs. It is worthy of note that the first nest was so compactly built, though to all appearance a most flimsy construction, that it was lifted bodily from its site by the end of one of its component sticks, and that the lining consisted solely of a mass of pieces of ox-hide (evidently torn from a carcase), weighing quite two pounds. The eggs agreed exactly with Layard's description. Butler noted it as specially abundant between Colenso and Estcourt, but found it far less numerous north and south of that district. Reed observed a considerable number—enjoying a gale of wind like Rooks in England—at Howick.

Heterocorax Capensis (Licht.), African Rook.—Like the last, universally distributed between Maritzburg, or rather Howick (about twelve miles up the road), and Newcastle. Gregarious, feeding in small bands, never exceeding, perhaps, twenty in number, attaching themselves to particular spots, and maintaining a regular line of morning and evening flight. Several pairs bred in the immediate neighbourhood of Newcastle, where eggs, agreeing with those described by Layard, were taken both by Butler and Reid in September and October. Nests bulky, built in isolated thorn trees, frequently close to farms or Kaffir "kraals," composed of twigs lined warmly with hair. These nests may be counted by dozens in the thorn bush near Ladysmith, and all along the main road between that and Estcourt. The call-note of this Crow is even more guttural and unmusical than that of *C. scapulatus*. Butler furnishes the following interesting notes regarding the nidification:—"Found a nest containing fresh eggs about the 12th September, which were unfortunately destroyed by Kafirs. The same pair built another nest at once in an adjoining tree, but being again disturbed by Kafirs deserted it before completion, and built a third nest at the top of the tree in which the first nest had been placed. From this last I took a single egg on the 2nd October. The birds then built again in a low peach tree about ten yards off, but the eggs were again destroyed by Kafirs on the 5th November. The Kafirs regard them as birds of ill omen, and consequently destroy their nests and try to drive them away. Another nest on a low tree by the side of the road between Colenso and Ladysmith contained four fresh eggs on the 14th November. The eggs are not at all like Crow's eggs, but resemble rather some of the Rails', especially those of the Indian White-breasted Water Hen, *Erythra phœnicura*."

Buphaga erythrorhyncha (Stanl.), Red-billed Beef-eater.—Only seen at Durban on April 7th, where the arrival of a flock on the backs of the horses belonging to the 7th Company Royal Engineers, which had just landed from the troop-ship, almost produced a "stampede;" and from the railway near Pinetown, perched on the backs of oxen (R). Does not, apparently, occur any great distance inland.

Lamprocolius phœnicopterus (Swainson), Red-shouldered Glossy Starling.—This is the *Juida phœnicopterus* of Layard's first edition. It was observed at Blaauw Krantz in November, by Butler and Reid, and found common at Camperdown in December. Immature birds have the iris brown, and but slight traces of the magnificent purple gloss of the adult (R).

Spreo bicolor (Gm.), Brown and White Glossy Starling.—A very familiar bird in the upper portions of the colony, remaining in flocks even after the breeding season has commenced. Nests in numbers in the Incandu River, at Newcastle, also in crevices in the rocks among the hills. Materials similar to those used by our common European Starling. Eggs four to six, light blue, sometimes spotted with red. Reid took two nests near Ladysmith from the inner walls of a deserted farm-house, one containing five pure blue eggs, the other six red-spotted ones. This was on the 18th November. It is sometimes seen on the backs of the oxen, which it diligently attends when they are grazing. It has a soft note, "pwipe," "pwipe," when disturbed.

Amydrus morio (Linn.), Cape Glossy Starling.—Common in flocks in rocky places, especially in the Newcastle district, scattering in pairs for the breeding season, in October. Butler gives the following account of its nidification:—"Found a nest nearly finished, on the 6th November, 1881. It was placed on a ledge of rock under a projecting slab of rock overhanging a stream, about 3 ft. above the level of the water, and consisted of a large mass of dry grass, matted together with mud, and lined with the same kind of grass, looking not unlike a large Blackbird's nest; the old birds were by no means shy, flying to and fro with building materials in their beaks in my presence. Unfortunately I had to leave the district before the eggs were laid. A few bits of green moss, collected from the neighbouring wet rocks, were stuck round the edge of the nest, and seemed to be growing and there was a large colony of *Petrochelidon spilodera* breeding about 4 ft. above the nest. The note is loud and striking."

Dilophus carunculatus (Gm.), Wattled Starling.—One obtained by Lieut. Giffard near Newcastle in December.

Amblyospiza albifrons (Vig.), White-fronted Grosbeak.—One shot in the bush on Sydenham Road, near Durban, on the 12th August (R).

Hyphantornis capensis (Gm.), Cape Weaver Bird.—Not often observed in the winter months, but Butler obtained a male on the 10th June there, and shot a couple of specimens in some bush near Ladysmith on the 21st August; so they do not, apparently, leave the colony at all. About Newcastle they were first noticed in numbers about the middle of October, when they at once proceeded to the construction of their nests. These we found in tall trees, on bushes overhanging steep krantzes, as well as in bushes and reeds by the river-side. Over thirty nests were counted on one tree. The male appears to do most of the building, but this may be only a supposition, arising from the much greater shyness of the female while an intruder is near. The first eggs were taken on the 29th October. How they can possibly remain in the nest when a gale of wind is blowing is quite a mystery, the entrance being so large and the depression inside the globular portion so little below it. "Apparently not so numerous down country as *H. velatus*, which seems almost to replace it at Ladysmith, Colenso, and Blaauw Krantz, but a colony were breeding on an island in Mooi River, at Weston, in November, and it was also nesting, in small numbers, at Richmond Road, in December" (R). Butler mentions that the nest is shaped like a snail's shell, with the entrance directed downwards, and that out of some dozens of nests examined, containing eggs in all stages of incubation, he failed to discover more than *three* eggs, many containing only *two*. "The male only assumes the bright yellow plumage in the breeding season; at other times he closely resembles the female, but is greener above and more yellow below" (B). "Legs and feet brownish flesh; bill blackish; iris brownish-white, in some greyish brown and dark brown. The crop of one examined was full of caterpillars" (B).

Hyphantornis velatus (Viel.), Black-fronted Weaver Bird.—Seen in September in small reedy vleys between Newcastle and the Drakensberg. Butler obtained specimens there, and found one or two nests, but these were afterwards knocked down by a hailstorm. Not observed elsewhere (though doubtless occurring in suitable places) in the Newcastle district, but we found it very common, and came across many colonies, nesting at most of the halting-places on the march down country, notably near Ladysmith, Colenso, and the Blaauw Krautz River. The eggs are most variable in colouring, as mentioned by Layard. Like *H. capensis*, the birds are very shy and difficult to get near, approaching their nests with extreme caution, when once disturbed. "Iris orange-yellow; bill and inside of mouth black. Legs and feet fleshy brown. Iris brown; bill horny brown above, pale flesh below. Legs and feet brownish flesh" (B). Butler adds the following note:—"Clusters of nests of this species observed about Colenso on the 10th November, on trees along the river bank and out in the open fields, but in most instances the young had left the nests. At Ladysmith as many as forty or fifty nests were observed on one tree, and the tree was often completely stripped of its leaves by the birds. Some of the nests contained young, and some fresh eggs (two as a rule, but sometimes three), of two types, white spotted with chesnut, and pale green spotted with greyish green."

(To be continued.)

NOTES AND OBSERVATIONS ON BRITISH STALK-EYED CRUSTACEA.

By John T. Carrington, F.L.S., and Edward Lovett.

(Continued from p. 230.)

Having completed our notes on the first sub-division of the Podophthalma, *viz.*, the Brachyura or Crabs proper, we now come to the Anomoura, a sub-division which embraces the most remarkable examples of these animals.

It would appear as if the Anomoura consisted of a series of stepping-stones in the development of Crustacea, from those constructed on one plan to those constructed on another; for in this sub-division we have genera of the "crab" form, as in *Dromia* and *Lithodes;* others of the "lobster" form, as in *Galathea* and *Munida;* whilst the remarkable genus *Pagurus* cannot be identified with either form of construction. One curious feature, however, exists in common, and it is this, that the fifth pair of legs are quite rudimentary in all the genera classed under this sub-division. What their use can be is not very clear, beyond the possibility of their being utilized to cleanse the carapace, for which purpose they seem well adapted. If, however, this be so, why are not those of the two other sub-divisions, *viz.*, the *Brachyura* and *Macrura* furnished with the same appendages? The habits of all the *Podophthalma* are not widely different, and in fact many are found living together under similar conditions. In describing the species of this class we shall refer more fully to this striking characteristic.

ANOMOURA.

Dromia vulgaris, Edwards.

This common Mediterranean species has the carapace, when the limbs are at rest, almost round like a ball. The whole body, excepting the forceps, is densely covered with a warm brown mass of closely-set setæ; this gives it the appearance of an Echinoderm (*Amphidotus cordatus*), for which at a short distance it might easily be mistaken. Its first pair of legs are massive; the extreme tips of the forceps are bare and shining, and are of a most exquisite pink colour. The remaining legs are comparatively short and armed with strong hooked claws, the last pair being rudimentary and curiously turned upwards, so as to rest flat upon the upper surface of the carapace. This unnatural position for ambulatory appendages may be accounted for by two remarkable specimens obtained from the Channel, off the Sussex coast, now in Mr. Carrington's collection. These two animals bore on each of their backs a finely grown sponge, each large enough to protect its host from observation. Unlike the instances to which we have already referred, notably that of *Pisa Gibbsii*, where the sponge grows *in* the villous coat of the carapace, this is not so with *Dromia;* for although the lower surface of the sponge was a perfect mould of the carapace of the crab, it was nevertheless quite free, and simply held in its place by the sharp claws on the two pseudo-legs already described as turned over on to the carapace of the animal. This instance of protective adaptation is without exception the most wonderful that we have yet met with in the whole of the British Crustacea. Although there are many very striking cases constantly attracting attention, they may be said almost to exist in spite of the animal itself; here, however, we have an example of quite another kind. It appears that the animal has actually taken, in its small rudimentary feet, a sponge which it has held upon its carapace, but not permitted it to obtain a hold upon that structure. At the same time the sponge has been able to grow; the remarkable way in which it has taken the form of the carapace of the animal without adhering to it is a proof of this.

The abdominal segments of *Dromia vulgaris* are somewhat narrow in the male, but very broad in the female. They project slightly beyond the posterior edge of the carapace, as if distended.

When alive the eyes of this species are bright, and give the animal a most interesting expression. The antennæ are comparatively short.

Dromia vulgaris can be said to answer to its specific name only in the Mediterranean, for it is undoubtedly very seldom obtained on our coasts, possibly no doubt owing to its being a deep-water species. We have obtained a few specimens from Guernsey, Jersey and in the Channel off the Sussex coast. Bell, who, by the way, only describes the species in the appendix to his work, states that it has been taken at Whitstable Bay, Worthing, and Selsey Bill.

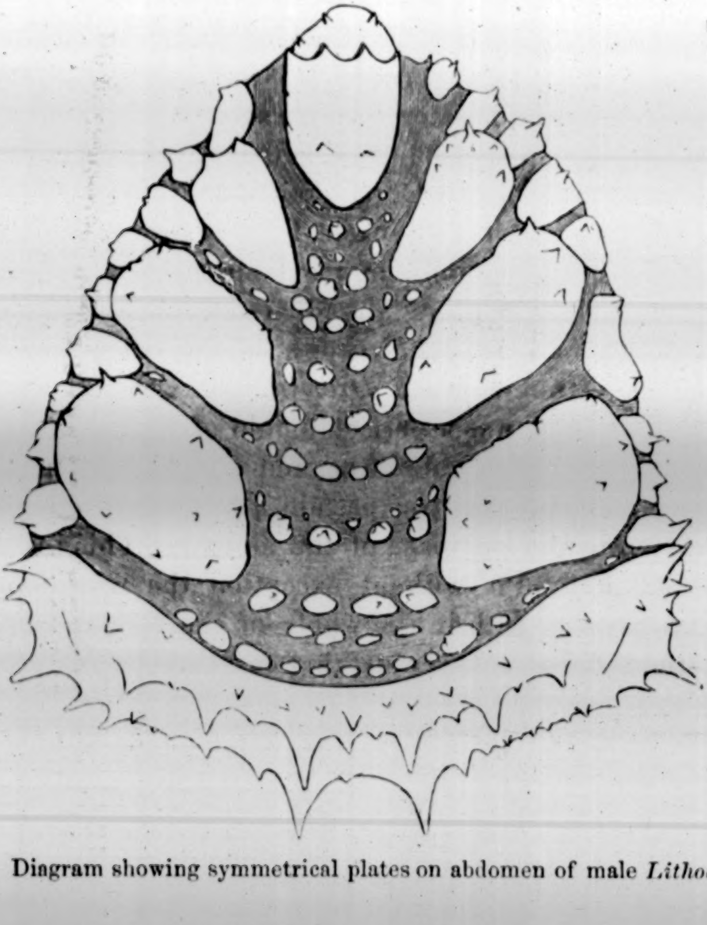

FIG. 1. Diagram showing symmetrical plates on abdomen of male *Lithodes maia*.

Lithodes maia, Leach.

The carapace of this species is of considerable size, often attaining the length of five or six inches; it is somewhat rounded in form, but is gradually extended forward into a powerful rostrum consisting of a double bifurcated spine. The carapace is strongly tuberculated, and the regions are well marked; it is also armed with sharp and powerful spines, very strongly developed on the margin. The eyes are fixed on stout peduncles, protected by strong spines, and the antennæ are simple and of moderate length. The first pair of legs are unequal in size, resembling in this respect the *Paguridæ*; the larger one is robust and powerful. These appendages are from four to five inches in length, and both are armed with numerous spines. The next three pairs of legs are tapering and thorny, the

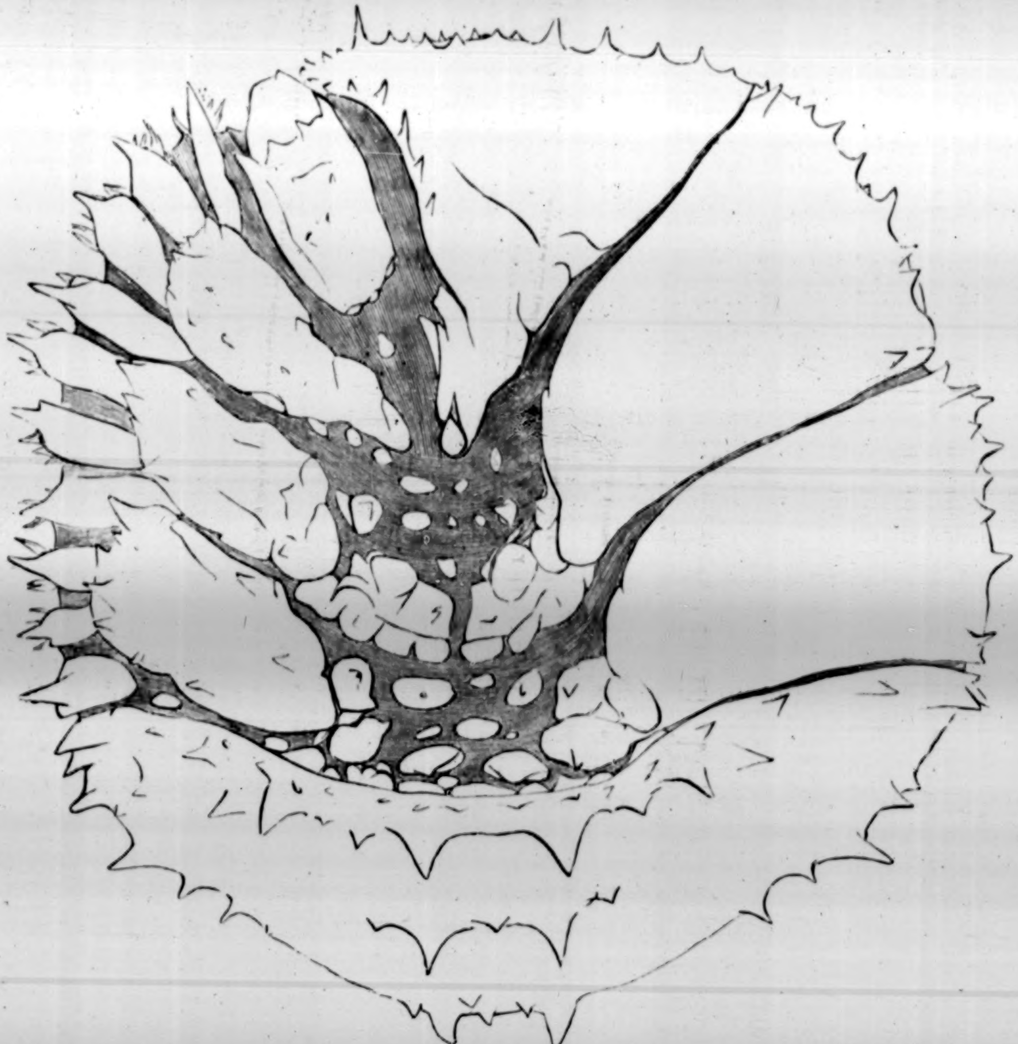

FIG. 2. Diagram showing asymmetrical plates on abdomen of female *Lithodes maia*.

terminal joint being a sharp claw. The third pair are often eight to nine inches in length. The fifth pair are characteristic of the class, and are simply small brush-like appendages.

The abdominal segments of *Lithodes maia* are very remarkable, and in the female sex differ from any other of our known Crustacea. It will be observed by referring to Fig. 1, that the plates on the abdomen of the male in this species are quite symmetrical, being three on each side. Very different however are those of the female, which are remarkably asymmetrical, as shown in the sketch (Fig. 2.)

It is difficult to account for this difference in the sexes, and we cannot help thinking that this must be a species undergoing a change in form. Possibly, at some period of its existence, it was akin in its habits to the Hermit Crabs, but for some reason has discarded its artificial protection, and may ultimately become like true crabs (Brachyura) in having symmetrical plates on the abdomen in each sex. It is difficult to imagine that the process of change is in an opposite direction.

The colour of this species is a pale dull red, varying slightly according to the age of the specimen.

We have been fortunate enough to obtain the zoæa form of this somewhat rare crustacean, which is as curious in structure as many other examples of this stage of development. It resembles in appearance *Nebalia bipes*, as figured on p. 130, vol. i., of Mr. Gosse's 'Manual of Marine Zoology.' Its cephalo-thoracic region is cylindrical, enlarging into a good-sized thorax; the eyes are large and sessile, and the legs are purely swimmers. The abdominal segments are simple and graceful in form, terminating in a remarkable filamentous tail. A comparison of this description with that of the perfect animal just mentioned will show how difficult it is to identify the unknown zoæa forms of Crustacea, unless they are attached to the swimmerets of the parent.

Although this animal is not so much subject to the growth of foreign substances upon its carapace as many other species, yet it is occasionally encrusted with barnacles.

We have obtained specimens of *L. maia* from the coast of Northumberland, upon which were fine groups of Balanidæ of over an inch in height of the calcareous structure. Besides the locality above mentioned, this species has been recorded by Bell from the Mull of Galloway, Firth of Forth, coast of Ayrshire, Aberdeen and Yorkshire, and from the Orkneys. It is usually found in deep water, and obtained by dredging.

(To be continued.)

OCCASIONAL NOTES.

VARIETY OF THE MOLE.—I have a specimen of a Mole trapped in this neighbourhood last February, which is of a pure cream-colour. There is not a single black or dark hair on its body, but the under parts are of a light brownish red. It is not only remarkable for its colour, but also for its size, measuring 8½ inches in length and 5 inches round the body. I have also a Mole that I bought some years ago which has two white or nearly white spots on its back, one about the size of a half-crown and the other of a shilling. The white hairs are just twice the length of the black ones on the rest of its body.—ROGER FORD (Wraxall, Somerset).

A VISIT TO RAMSEY ISLAND, PEMBROKESHIRE.—On June 1st, a long-projected visit to Ramsey Island was accomplished under very favourable circumstances. A beautiful summer's day made the flower-covered cliffs, with the blue water rippling at their feet, seem like a piece of fairy-land; and the company of Mr. Mortimer Propert, of St. David's, a most efficient guide to the island and its bird-haunts, enabled me to proceed at once to the parts most attractive to a naturalist. It would be impossible to describe the bright appearance of the cliffs beneath the June sunshine. Here large patches of the pink sea-thrift, and there vast beds of the snowy blooms of *Silene maritima*; white roses of an exquisite perfume were not wanting, growing entwined with the heath, and ferns were everywhere, in some places reaching almost to the water's edge: and here and there cropped out on the rocks those bright orange lichens which Mr. Brett loves to paint in his exquisite views of the Cornish coast. As our boat ran into the little harbour a Sea-pie was observed sitting on a rock, and on our approach flew off with his shrill whistle. A few pairs breed round the island. Landing, we made our way to the S.W. end, our object being to see the ledges of the cliffs most affected by the sea-fowl. It was a busy scene. Guillemots, Razorbills, and Kittiwakes were in profusion, but as yet not many of the birds had eggs. Parties of them were continually flying off to sea; others arriving and settling on the cliffs, shaking their wings from time to time to dry them in the sun. We were astonished at the velocity of the flight of the Razorbills when once on wing. As we stood on the top of the cliff, the birds flashed backwards and forwards beneath us, some of them circling round their special ledges in alarm at our appearance, afraid to settle and jealous as to the safety of their eggs. All the while there was a weird concert proceeding from the birds. The caterwauling wail of the Kittiwakes, by far the most numerous of the sea-fowl tenanting the island, reminded one of the sounds proceeding from the hyena-den at the Zoo; with these were blended the crooning and husky barking of the Razorbills and Guillemots and the laughing cry of the Herring Gulls. Proceeding round the island we disturbed a pair of Buzzards from a rocky inlet, where they were doubtless nesting; a Peregrine was seen in the sky overhead; a pair of Ravens settled near the cairn of stones marking the summit and watched us narrowly; Choughs and innumerable Jackdaws flew along the cliffs. Time not allowing, we did not visit the north end, where the Puffins have their quarters. Mr. Propert told me that he had never seen the Black Guillemot on Ramsey or any of the smaller islands in its neighbourhood, nor can I hear of species being now on Skomer or Caldy, and probably it was entered by mistake on the list of Pembrokeshire birds. Some years ago I picked up a Black Guillemot which had been washed ashore on the N. Devon coast, which I at the time suspected might have been brought across from Wales. On the western slopes of Ramsey we found a pretty little moth (*Philea irrorella*) occurring in great numbers, and were glad to box a few. The tide runs with tremendous force between Ramsey and the mainland, and we had a troublesome pull across on our return against it, a brisk east wind raising a choppy sea. The rocks below the water cause countless eddies and back currents with broken water, locally called "shots," and anyone navigating the narrow channel in a small boat soon has experience of these. However, we reached Portstinnan, our harbour on the mainland, in safety, and shall always recal our pleasant visit to Ramsey as a day worthy to be marked with white chalk, *favente Jove* and Mr. Propert.—MURRAY A. MATHEW (Stone Hall, Haverfordwest).

CURIOUS NESTING PLACE OF THE COMMON WREN.—In April I found the nest of a Wren placed in some flags standing out about three feet in the water. It was fastened to three or four stems and only about two inches above the water. It is well known that this bird tries to match its nest with surrounding objects, and two nests here fully carry this out. One is on a fir-bough where the bracken has grown through and is still standing, being supported by the branch; the outside of this nest is entirely made of bracken, and most difficult to see; I only found it by the bird flying out. The other is on a stack of straw in my stackyard, the straws having been drawn out and woven round in the most beautiful manner, quite proving that this interesting little bird is not colour-blind, because if built with moss and leaves (the usual material) it would at once have been seen; whilst anyone might walk within three yards and never see this one. As this piece of stack was going to be cut I took this nest, but she has since built another like the first one: I trust she may be rewarded for her cleverness by rearing her brood. I have this year found twelve nests within one hundred yards of the house.—J. WHITAKER (Rainworth Lodge, near Mansfield).

CALL OF THE LONG-EARED OWL.—For several years past the Long-eared Owl has bred in a plantation of tall Scotch and spruce firs, a few hundred yards above my house, generally I believe in old Magpies' nests. In 1880 I first noted the peculiar warning note I am about to describe. On the 16th May last, while standing among these firs with the Rev. W. W. Flemyng, about nine p.m., and while the young were uttering from the nest their plaintive call for food, the parent Owl, seeing us, alighted on a neighbouring tree and made a distinct quacking sound, repeated three or four times in close succession, and then, after an interval of silence, similarly repeated. It took up more than one position, observing us all the time. On hearing this sound (which decidedly resembles the word "quack"), the young became quite silent and remained so as long as it was repeated. It resembles not so much the long quack of a duck as the sound produced by a toy which is squeezed to make it squeak or quack, with something of the conventional tone of a "Punch and Judy" performance. On the evening of June 6th, the young, having left their nest, were uttering their call from other trees, when the parent flitted past, hushing them at once by this note, and perched on tree after tree in full view, even closer than twenty yards from me, trying to draw me away from the young, and at the same time warning them of danger. I could observe her distinctly while uttering the "quack." Her back was arched, neck stretched forward, mouth opened wide, and wings compressed as the sound was uttered. I have never heard any Owl hoot, the Tawny Owl being unknown here.—RICHARD J. USSHER (Cappagh, Co. Waterford).

MARSH WARBLER'S NEST NEAR TAUNTON.—The nest of the Marsh Warbler has been again obtained in the neighbourhood of Taunton the beginning of June, and, like former ones, was attached to the stalks of meadow-sweet (*Spiræa Ulmaria*). The eggs are very handsome ones, and have been placed in the collection of Mr. J. Marshall, of Belmont, Taunton.—MURRAY A. MATHEW. [See Mr. Cecil Smith's remarks on the breeding of the Marsh Warbler in Somersetshire, 'Zoologist,' 1875, p. 4713.—ED.]

EGGS OF THE CUCKOO IN BUNTINGS' NESTS.—On May 16th I found near here a Cuckoo's egg in the nest of *Emberiza cirlus;* on the 24th, on this place, one in a nest of *E. citrinella;* and on the 25th, also on this place, one in another nest of *E. cirlus*. In each nest were three Bunting's eggs. In no instance did the Cuckoo's egg at all resemble a

Bunting's in markings, but the eggs of the Cuckoo found on this place on the 24th and 25th were quite undistinguishable from one another, and I should say were certainly laid by the same bird.—C. Bygrave Wharton (Hounsdown, Totton, Southampton).

Ornithological Notes from Jersey.—During last winter an unusual number of Great Northern Divers remained with us, their favourite haunt being the shallows around La Rocque Point, where, on almost any day during December and January, from thirty to forty of these beautiful birds might be seen at once. On one occasion no less than ten of them were in the little harbour there, within a hundred yards of the fishermen's houses. We also had a great number of Sclavonian Grebes, some which came into my possession in the month of January, having the beautiful bronze-coloured ear-coverts of their summer dress. The Red-necked and Great Crested Grebes (the latter a rare visitor) were fairly represented. Other winter visitors, such as Brent Geese, various Ducks and Mergansers, were very scarce. Of the large flocks of the first-named, which usually occupy the bay of St. Aubin, I only saw a few solitary specimens, and the markets, generally well supplied with these birds from La Rocque and the Minquier rocks, had very few of them. Our inland visitors, the Woodcock, Snipe, and Plovers, were scarce. Of uncommon visitors, one Richardson's Skua, in immature plumage, was taken alive (having been wounded) in St. Brelade's Bay, and is now in my possession. It is, I think, only the second specimen recorded from Jersey. Reverting to the Great Northern Diver, many of your readers have probably been struck with the great difference in the measurements of this bird, as given by different authorities, Bewick giving the length as three feet six inches, Yarrell two feet six inches to two feet nine inches. Bearing this in mind, I carefully measured some twenty specimens which I obtained during the winter, with the following result:—Males, two feet nine inches to three feet three inches: females, uniformly two feet six inches. As regards weight, I found that, in all cases, below that given by the books (fourteen and sixteen pounds); the largest specimen I have had, although in good condition, weighed but nine-and-three-quarter pounds. Of specimens obtained in January, one female was in full plumage and two others nearly so; males uniformly in the more sombre dress, or with just a few white spots on the scapulars.—J. Sinel (Bagot, Jersey).

Curlew Sandpiper in Cornwall.—While fishing on the banks of the Bude reservoir towards the end of May, my brother, Col. Mathew, found himself close to a Curlew Sandpiper in the rich chesnut dress of the complete summer plumage. This Sandpiper is very rare in the spring on the south-west coast, although common enough in the autumn. Many years ago Mr. S. B. Heaven shot some in the month of May on Lundy Island, and this is the only other instance within my experience of the occurrence of the Curlew Sandpiper in its breeding plumage, on the south-west coast.—MURRAY A. MATHEW (Stone Hall, Haverfordwest).

MARSH HARRIER IN HERM.—As the Marsh Harrier does not very frequently occur in the Channel Islands, I think it worth while to record the occurrence of one in the Island of Herm, near Guernsey, on the 2nd of May this year, when it was killed by the keeper in that island, and soon afterwards forwarded to me by Mr. Jago, the bird-stuffer, in Guernsey. It was in immature plumage, the Moor-Buzzard plumage of Bewick. May seems an odd time for it to be found wandering about, but still that is the month in which the more recent occurrences of this bird in Herm which I have been able to record in the 'Birds of Guernsey' have taken place. Probably the young birds of the year before are driven away by the old ones in the spring, and consequently have to wander about and pick up a living on their own account,—CECIL SMITH (Bishop's Lydeard).

TURTLE DOVE IN CO. SLIGO.—On the 28th of May a specimen of that rare visitant to the west of Ireland, the Turtle Dove, appeared here and remained about the place until the 3rd of June, on which date I last saw it. On several occasions I observed it picking on the roadway of the avenue, and as it appeared to keep near one particular clump of trees, I was in hopes of its finding a mate and building a nest. However, as I have not seen or heard anything of it since the 3rd inst., I fear that it has left the place, probably for the young larch plantations of Belleek, at the other side of the Moy. The Turtle Dove is of such rare occurrence in this part of Ireland, that it has come under my observation only twice previously. So far back as the 27th of August and 3rd of October, 1862, I saw a Turtle Dove (probably the same individual) feeding in a stubble field. On the last-named date I had a very close view of the bird, and as I could not see the marks on the sides of the neck, I considered it a young one, probably bred in the larch woods of Belleek.—ROBERT WARREN (Moyview).

SNIPE PERCHING.—When walking up the brookside here the other day I flushed a Snipe, which after flying about a couple of hundred yards settled on some posts and rails, where it remained about a minute before taking flight again. This is the first time I have noticed a Snipe perch on anything, but have, of course, read and heard of their doing so, though I believe the habit is far from common.—J. WHITAKER (Rainworth Lodge, near Mansfield, Notts).

TWO KESTRELS LAYING IN THE SAME NEST.—When lately in North Devon, my nephew came in one day with a Kestrel's nest, and said there were three Kestrels in the tree from which he took it, a male bird and two females. The nest contained six eggs; four of them were fine type, dark and handsome varieties; the other two were of the ordinary character in markings and colour; and this great difference I thought indicated that the clutch was the joint production of the two female birds.—MURRAY A. MATHEW (Stone Hall, Haverfordwest).

FIRECREST IN YORKSHIRE.—Messrs. Clarke and Roebuck, in their 'Handbook of Yorkshire Vertebrata,' remark (p. 22) that the Firecrest is a casual visitant to the county, and of extremely rare occurrence in winter. In December, 1880, I noticed at Clifton, near York, a pair of what I thought at the time were Golden-crested Wrens, *Regulus cristatus*, but on shooting one I discovered it to be the Firecrest, *R. ignicapillus*.—W. HEWETT (York).

ON THE FOOD OF THE HERRING.—At page 235 I remarked that small Sand Launces (*Ammodytes*) formed the food of the Herrings which were being captured off Mevagissey. On the night of June 9th some thousands were landed at the same place, having been taken about eight miles from land near the surface of the sea, where they appeared to be feeding on young fish. Mr. Matthias Dunn, observing that they were all crammed with one kind of fry, kindly placed the contents of one stomach in spirit and forwarded it to me. I found the whole or portions of about thirty-five small fish, the largest being an inch and a half in length, and to my surprise observed that they were almost entirely composed of the gobioid *Crystallogobius Nilssonii*, of which only a single example has been recorded from the British Isles, and which was captured by Mr. Edward, of Banff, in May, 1868. The large canines and persistent premaxillary and mandibular teeth were very distinct, also the large broad-based pectoral fin, the disk-like ventrals, and two spines only in the first dorsal fin, rendering identification easy. I however wrote to Mr. Dunn, who has kindly sent me more, which fully confirm my first views. These fish were filled with the remains of small Crustacea (not yet examined). I do not propose at present to discuss how these fish, usually believed to be almost restricted to the coasts of Norway and Sweden, may have been brought to our shores by currents or in pursuit of food. Still it is worth considering whether the Herrings may not have followed these Gobies from higher latitudes, as the Gobies have pursued their small prey. There is also another question that I hardly consider solved. Herr Collett, from whose investigations most of what we know of these fishes is derived, considered them *annual vertebrates*, or fish which having spawned die. Among the last batch of specimens received from Mr. Dunn are some very young ones, a little thicker in the body than horse-hair, also every intermediate size up to an inch and a-half in length, but no spawning fish, nor I believe spawned fish. It is very remarkable how such forms should be taken so far from the coast, and only shows how much we have yet to ascertain respecting the food of sea fishes and what it is that influences these various migrations.—FRANCIS DAY (Pittville, Cheltenham).

DOGFISH ON THE COASTS OF SLIGO AND MAYO.—Dogfish in immense numbers have this season invaded the fishing-grounds off Killala Bay and the adjacent coasts; indeed so large have been the "schools" that fishermen speak of seeing acres of them, and owing to their voracity and numbers have seriously injured the coast fishings for some weeks past, more especially the Mackerel fishing; for although a ground fish, they rise to the surface and attack the Mackerel or Herrings suspended in the drift nets. Some eight or ten days ago, off the Sligo coast, the crew of a fishing boat shot their nets into a "school" of Mackerel, and a most successful haul was made; but to the great disappointment of the fishermen, on taking their nets on board, it was found that of nearly two thousand Mackerel taken, only two hundred were marketable, the remaining fish being so bitten and disfigured by the Dogfish as to be unsaleable; and as the marketable fish were sold for 18s. per hundred, the feelings of the men at such a loss may be better imagined than described. It appears that the Dogfish have thus come in-shore for the purpose of producing their young, and their presence has not only stopped the drift-net fishing, but has interfered also with the long-line fishing. The fishermen say that until these fish have left, it will be useless shooting either nets or lines. It will be interesting to know whether other parts of the coast have been similarly visited by Dogfish this season.—ROBERT WARREN (Moyview, Ballina).

ON A LEECH FOUND IN CORNWALL.—On May 12th, I found in a little rill at Tremeader, springing out of the granite rock of Zennor Hill, near Penzance, which rill makes its way through a total course of less than a mile to the sea, over a clear pebble bottom bordered by ordinary vegetation, a large Leech (either a Horse Leech or the Black Leech, probably from its decided colour the latter). I searched the rivulet for a considerable distance up and down, but could find no trace of animal life in it except this Leech and some tadpoles. The bed of this rivulet is throughout of a sandy nature, without any suspicion of a muddy bottom anywhere. There are leeches in ponds in this district, but the nearest that I know of are many miles away from this Tremeader rivulet, and spearated from it by a granite watershed. Of course the question is, where did this Leech come from?—THOMAS CORNISH (Penzance).

[Some Leeches are parasites on fishes; the specimens in question may have been transported in this way, but without seeing it, or having a more detailed description, we cannot express an opinion. "Horse-Leech" is a name given to two distinct species, or even genera—*Hæmopsis sanguinea* and *Aulostomum gulo*.—ED.]

PROCEEDINGS OF SCIENTIFIC SOCIETIES.

LINNEAN SOCIETY OF LONDON.

Anniversary Meeting, May 24, 1882.—Sir JOHN LUBBOCK, Bart., M.P., F.R.S., President, in the chair.

Mr. H. T. Stainton, on behalf of the Audit Committee, read the statement of receipts and payments for the year, and the Treasurer, Mr. Frank Crisp, followed with a detailed explanation of the various items, showing that the Society was in a sound financial condition, for besides investments about £4000, the balance at bankers was £649 2s. 5d.

Afterwards the Secretary, Mr. B. D. Jackson, read his annual report. Since the last anniversary fifteen Fellows of the Society, two Foreign Members, and one Associate had died, and seven Fellows had withdrawn; while forty new Fellows had been elected. Between purchase, exchange, and donations 383 volumes and 348 separate parts had been added to the Library, and a large number of books and pamphlets had been bound.

The President then delivered his Anniversary Address, commenting generally on the events of the past year, with special reference to their bearing upon the Society. He also made allusions to the removal of the Botanical Department of the British Museum to South Kensington, and to the additions of Miss North's oil paintings, &c., to Kew Gardens. This was followed by reports on the various botanical and zoological publications published during the last twelvemonth.

The obituary notices of deceased Fellows was read by the Secretary, the Society having to deplore the loss of Mr, Charles Darwin, Prof. Rolleston, Sir C. Wyville Thomson, and others, besides their late Treasurer, Mr. Frederick Currey, who had been in office above twenty years; as also the Librarian, Mr. R. Kippist, who had been in the Society's service over fifty years.

The Scrutineers having examined the ballot, then reported that Mr. H. W. Bates, Prof. S. Cobbold, Prof. P. M. Duncan, Mr. E. M. Holmes, and Sir J. D. Hooker had been elected into the Council, in the room of Prof. Allman, Rev. J. M. Crombie, Mr. W. S. Dallas, Mr. A. Grote, and Prof. Lankester, who retired; and for officers, Sir J. Lubbock as President, Mr. Frank Crisp as Treasurer, and Mr. B. D. Jackson and Mr. G. J. Romanes as Secretaries.

June 1, 1882.—FRANK CRISP, LL.B., Treasurer, in the chair.

Mr. H. C. Burdett was elected a Fellow of the Society.

In illustration of his paper, "On some Cutaneous Nerve Terminations in Mammals," the following preparations were shown under the microscope by Dr. Hoggan:—(1) Longitudinal and transverse views of the organ of

Eimer in the Mole, the nerves seen being representatives of the nerves upon an ordinary hair-follicle; (2) forked nerve termination on hair-follicle of Mole's tail; (3) nerve endings in nose of Cat; (4) termination of a nerve in the ganglion cells upon a "feeler" hair in the Horse, and that of an ordinary hair in the same, showing forked and cellular endings and encircling fibres. Dr. Hoggan related his observations on the habits of a Mole (*Talpa*) kept in confinement, more particularly concerning its nasal organ as a special sense of touch, and of the tail as a tactile organ. He compared the development of the nerve in these with the cutaneous nerve structures of other Mammalia, dealing with the effects of habit in causing evolution of the so-called "organ of Eimer." Treating in detail of the differentiation of structure and function in this latter, he summed up as follows:—The central fibrils in the organ in question, and the nerve-cells at the base, with which they are continuous, are similar in character to the subepidermic nerve-cells and their intra-epidermic fibrillar prolongations. The outer circle of fibrils have equally their existence and nature explained, as well as the cause of their being dragged into their present position in the epiderm. Then, as relates to function, Eimer was certainly correct, or at all events within the truth, when he spoke of the organ he had discovered in the Mole as a "tactile instrument," for it certainly possesses most remarkable powers of touch, but along with this other sensorial functions. Indeed it may be considered very probable that the inner circle of fibrils are the analogues and homologues of the forked endings, and that they provide for the sense of touch, while the centre fibrils and those of the outer circle provide for the sense of temperature, pain, and any functions connected with the sympathetic nerve system. The Paccinian bodies at the root of the organ, but not properly connected with it, are probably the agents for registering pressure, so that in itself the organ of Eimer is completely provided with the full armament of peripheral nerve terminations.

A paper was read "On the Ascidians collected in the South Coast of England during the Cruise of the yacht 'Glimpse' in the year 1881," by Mr H. A. Sorby and Prof. W. A. Herdman. A notice was given of the localities visited round the south coast of England, the depth where specimens were obtained, the nature of bottom, &c., followed by particulars respecting twelve species of simple Ascidians, one of these being a new form of *Molgula*, dredged in Hole's Bay, near Poole, and named by the authors *M. cæpaformis*. Only a few compound Ascidians were obtained during the cruise.

Mr. P. Herbert Carpenter followed with "Descriptions of new or little-known *Comatulæ*," being materials derived from the 'Challenger' Expedition and from the Hamburg Museum. These comprise three species of *Atelecrinus*, one *A. Wyvilli*, a new form dredged near the Fiji Islands; four species of *Ophiocrinus* (= *Eudiocrinus*, n. g.), three of which are new; nine species of *Antedon*, of which eight are new; and seven species of *Actinometra*, two of these being hitherto unknown. The author institutes the new genus *Eudiocrinus* for Semper's *Ophiocrinus*, the latter name having been preoccupied by an obscure Crinoid described by Salter from the Devonian formation of South Africa.

June 15, 1882.—Sir JOHN LUBBOCK, Bart., M.P., F.R.S., President, in the chair.

The following gentlemen were elected Fellows of the Society:—The Rev. R. Collie, Chas. A. Ferrier, W. D. Gooch, T. D. Gibson-Carmichael, Sir J. R. Gibson Maitland, Bart., M. Murphy, Rev. H. A. Soames, H. C. Stephens, H. W. G. Stephens, and James Turner.

Specimens in illustration of the papers by Mr. Geo. Brook and Mr. R. M'Lachlan, were exhibited under low powers of the microscope.

Prof. E. Ray Lankester read "Notes on some Habits of the Scorpions, *Androctonus funestus*, Ehr., and *Euscorpius italicus*, Roes." Of the former he related its mode of burrowing in the sand, making horizontal tunnels occasionally eight inches long. The process of exuviation was also witnessed on several occasions, when the Scorpion, pushing its large chelæ into the sand, scraped rapidly backwards with the three anterior pairs of walking legs. The specimens of *Androctonus* were evidently timid; in walking they raise their body, and the tail and sting are carried highly arched over the back; in this mode of carriage differing from *Euscorpius*, which keeps its body low and flat, and drags the tail behind with only the very tip bent. *Androctonus* only fed at dusk, and then, seizing its prey with the left chelæ, archedly swung its tail over its head and pierced its victim with its sting, afterwards inserting its short chelicerœ and sucking in the nutriment of its victim. The so-called combs or pectiniform appendages do not appear to be ordinarily sensitive; they may possibly become more so during the breeding season. The old story of the suicide of the Scorpion when surrounded by a ring of fire, is to be partially explained by an individual accidentally lacerating itself by the sting when driven to extremities. The *Euscorpius* observed occasionally fought furiously with each other, and then only used their chelæ, but never the sting.

A paper was read "On a New Genus of *Collembola* (*Sinella*) allied to *Degeeria*, Nicolet," by Mr. Geo. Brook. It differs from *Degeeria* in having four eyes, instead of sixteen; in the absence of long abdominal hairs; and in the different construction of the claws and mucrones. *S. curviseta* is a new species, and on which the genus *Sinella* is founded; examples were bred, and watched through their immature stages onwards.

Mr. R. M'Lachlan read a communication "On a Marine Caddis-fly (*Philanisus*, Walker, *Anomalostoma*, Brauer) from New Zealand." Material for examination of this curious discovery was sent the author by Prof. Hutton, of Canterbury, New Zealand. The larva, &c., were obtained in rock-pools between high and low water mark in Lyttleton Harbour. A small tubular cylindrical pupa case, with attached fragments of a coralline, a larva somewhat damaged, and disconnected portions of others, enabled the identification of the genus.

Prof. P. M. Duncan gave the salient points of a paper "On the Genus *Pleurochinus*, L. Agass., its classification, position, and alliances." After noting the diagnosis of *Pleurochinus* by L. Agassiz, and the description of the species *P. bothryoides* of A. Agass., in the 'Revision of the *Echini*,' the linking it with the fossil forms from Gand described by D'Archiac and Haime, was shown to be erroneous. The supposed affinities with *Opechinus*, Desor., a genus of no value, were considered, and the minute anatomy of the test of *Pleurochinus* was shown to correspond closely with those of *Temnopleurus*. Placing the form (with A. Agassiz) as a subgenus of *Temnopleurus*, its distinctness from *Temnochinus* and from the nummulitic so-called *Temnopleuridæ* of D'Archiac and Haime, was proved.

Mr. F. Maule Campbell detailed some interesting observations "On a probable case of Parthenogenesis in the House Spider, *Tegenaria Guyonii*." He concluded by submitting that the fertility of one of the female spiders in question, after a confinement of eleven months, during which time she twice moulted and afterwards laid eggs, which were duly hatched, can only be explained by one of the following alternatives:—either that she was impregnated previous to the casting of the two exuviæ, *i.e.*, in an early and therefore immature stage; or parthenogenesis occurs in the *Araneida*. Hitherto no instance of this latter has been recorded in the true Spiders, *Araneida*, though Megnin, Kramer and Michael have shown that the females of some *Acarini* couple with the males prior to their final moult, and that practically there are two stages of sexual maturity; moreover, Beck and others have related cases of undoubted parthenogenesis in the *Acari*.

A paper was read "On the Indication of the Sense of Smell in *Actiniæ*," by Walter H. Pollock, with an addendum by G. J. Romanes. These authors record experiments whereby it appears probable that these lowly organized creatures are aware or evince recognition of the presence of food when placed near them. This sense is possibly of a diffused nature, and as suggested may be equivalent to an imperfect olfactory kind.

A description was given of a new Infusorian allied to *Pleuronema*, and obtained in ponds near Hertford by Mr. F. W. Phillips.

Thereafter two papers were read, viz.:—"On the *Teredo utriculus*, Gmelin, with remarks upon other Shipworms," by Mr. Sylvanus Hanley; and the fifteenth "Contribution to the Mollusca of the 'Challenger' Expedition," by the Rev. R. Boog Watson; dealing with the families

Ranellacea, *Muricidæ*, *Scalariidæ*, and *Solariidæ*. With a few remarks from the President, concluding the session, the meeting adjourned till the 2nd November.—J. MURIE.

ZOOLOGICAL SOCIETY OF LONDON.

June 6, 1882.—Prof. W. H. FLOWER, LL.D., F.R.S., President, in the chair.

The Secretary called the attention of the meeting to the curious way in which the young Cormorants lately hatched in the Gardens were fed by the parent birds, and exhibited a drawing by Mrs. Hugh Blackburn illustrating this subject.

A communication was read from Prof. St. George Mivart, containing a series of observations on certain points in the anatomy of the Cat tribe (*Æluroidea*).

Mr. Howard Saunders read a paper on some *Laridæ* collected by Capt. H. H. Markham, R.N., on the coasts of Peru and Chili, comprising, amongst other rarities, the third known example of the large Fork-tailed Gull (*Xema furcatum*), a species which had been vainly sought for on the Pacific coast of America for upwards of thirty years. The author drew attention to the peculiarities distinguishing the various species of Gulls found in the Pacific from those of the rest of the globe; and pointed out that, owing to oceanic currents, the connection between the species now only found on opposite sides of the equator had evidently been much more recent in the Pacific than in the Atlantic.

Prof. F. Jeffrey Bell read a paper containing an attempt to apply a method of formulation to the species of the *Comatulidæ*, and added the description of a new species, which he proposed to call *Actinometra annulata*.

Mr. Francis Day read some notes on the supposed identity of a specimen of a fish determined by Dr. Günther as *Anguilla Kieneri* with a Gadoid *Lycodes*.

Mr. E. J. Miers read the second portion of his paper on the Crustaceans received by the British Museum from the Mauritius; and called special attention to what appeared to be a variety of *Palinurus longimanus*, of the West Indies, which occurred in it.

Mr. W. A. Forbes read the fifth of his series of papers on the anatomy of the Passerine birds. The present communication was devoted to the consideration of the structure of the genus *Orthonyx*, which was shown to be a true Oscinine form.

Mr. H. J. Elwes exhibited and made remarks on a Stonechat (*Saxicola*) which he had obtained during a recent expedition to the Aures Mountains of Algeria.

The Secretary exhibited a series of the diurnal and nocturnal Lepidopterous insects bred in the Insect House in the Gardens during the present season.—P. L. SCLATER, *Secretary*.

ENTOMOLOGICAL SOCIETY OF LONDON.

May 3, 1882.—H. T. STAINTON, Esq., F.R.S., &c., President, in the chair.

The President made some appropriate remarks upon the great loss Science had sustained by the death of Mr. Charles Darwin; and especially referred to his early interest in Entomology by becoming an Original Member of this Society, founded in May 1833, while he was travelling in South America.

Dr. Evald Bergroth (11, Robertsgatan, Helsingfors, Finland) and Mr. W. J. Williams (Zoological Society, Hanover Square, W.) were balloted for and elected Members of the Society.

The Secretary read a communication from the Secretary of the Essex Field Club, requesting that Members would join in a memorial to the Conservators of Epping Forest and others, requiring that the Forest should be preserved in its *natural condition*, in accordance with the Act of Parliament.

Messrs. M'Lachlan, Meldola, Cole, Fitch, and others expressed the wish of all naturalists that Epping Forest should be retained in its present wild state rather than be converted into a park.

Mr. W. C. Boyd exhibited a dark variety of *Fidonia piniaria*, L., taken at Woking in 1880 by Mr. Mugford; it was a female, resembling, but even darker than, a Scotch specimen. Also a curious pale variety of *Anchocelis pistacina*, Fabr., captured at Cheshunt last autumn.

Mr. T. R. Billups exhibited a series of *Cryptus migrator*, Fabr. These were bred from a cocoon of *Trichiosoma betuleti*, Klug; four specimens emerged on April 6th, and no others until the cocoon was cut open on April 20th, when thirteen more flew out; of the seventeen specimens bred only two were females.

Mr. W. F. Kirby read some notes on a Hybrid between *Antheræa Pernyi*, Guér., the well-known oak-feeding silkworm of North China, and *A. Roylei*, Moore, a North Indian species, also an oak-feeder. The cocoon was fully as large as that of *A. Roylei*, but instead of there being a considerable space between the outer and inner cocoon there was scarcely any interval between them. *A. Pernyi* has a similar but much smaller cocoon; and hence it would appear that that of the hybrid would be of greater commercial value than either." The specimen with its cocoon, also cocoons and imagos of the two parent species, were exhibited.

Miss E. A. Ormerod exhibited a curious abnormal growth of the flowers of the common ash (*Fraxinus*) from Osterley Park.

Mr. Fitch said this gall was the work of *Phytopti*, and referred to Dr. Franz Löw's description and figure (Verh. z.-b. Ges. Wien. xxviii. 134, pl. ii. fig. 2). He directed the attention of the members to an unknown woody, irregularly spherical, gall on the ash-keys, of which he once received two specimens from the late Mr. F. Smith; one which he opened contained a fat, white, apparently curculionideous, larva.

Mr. J. B. Bridgman communicated some "Further Additions to Mr. Marshall's Catalogue of British *Ichneumonidæ*." Sixty-seven species were added to the British fauna, ten of which were new to Science.

Mr. E. Saunders read a continuation of his "Synopsis of British Hymenoptera." The *Diploptera* and *Anthophila* to the end of the *Andrenidæ* were now treated of.

Prof. J. O. Westwood communicated a memoir "On the supposed abnormal habits of certain species of *Eurytomides*, a group of the hymenopterous family *Chalcididæ*." A general *resumé* of the life-history notices of the *Eurytomidæ* was given; and Prof. Westwood inclined to the belief expressed by Harris, Fitch, and Walsh in America that certain species were phytophagous; thus having phytophagous and sarcophagous species included in one family, or even genus.

Mr. E. A. Fitch could not concur in the belief that any of the *Eurytomidæ* were of phytophagous habits, since he had bred many hundreds of specimens belonging to various species from twenty-seven distinct hymenopterous and dipterous galls, in all of which they were undoubtedly parasitic. He especially referred to Dr. Giraud's and Dr. Mayr's papers in the Vienna 'Verhandlungen' (vol. xiii. pp. 1250–1296, and vol. xxviii. pp. 297–334). The evidence of phytophagism seemed to rest on the "joint-worm" (*Eurytoma hordei*, Harris) of America, and on *Isosoma hyalipennis*, Walk., or *I. longipennis*, Walk., a species bred from galls on *Triticum* in this country. He had bred some scores of this latter insect, but believed it to be parasitic on a dipterous gall-maker, either an *Ochthiphila*, as stated by Giraud, or a *Lonchæa*, as stated by Perris. On comparing these twitch-galls with the reed-galls produced by *Lipara lucens*, Meig. (specimens of both being exhibited), from their analogous structure it seemed fair to conclude that our *Triticum* gall was produced by one of the *Muscidæ*. *E. hordei* is also more probably a parasite of some Muscid allied to *Chlorops*; in both cases the parasite being far more frequently bred than its host. Mr. Fitch exhibited numerous specimens of galls in illustration of his remarks.

June 7, 1882.—H. T. STAINTON, Esq., F.R.S., &c., President, in the chair.

Mr. P. B. Mason exhibited a specimen of *Zygæna filipendulæ*, var. *chrysanthemi*, Esp., figured by Hübner, which was captured by Mr. J. E.

Nowers last June in Bewdley Forest; also a corresponding greenish black variety of *Callimorpha dominula*, L., bred at Dover.

Mr. Mason also exhibited two specimens of the *Noctua* recorded by Dr. Knaggs as *Agrotis helvetina*, Boisd. Three specimens were taken near Derby in 1870; one of these Mr. Mason received direct from the captor, and the other but one remove from him. He had recently sent these to Dr. Staudinger for his opinion, who returned them as "perfectly unknown to him, but doubtless a great aberration of some *Noctua*, most probably *N. augur*." This agreed with what Mr. Mason had previously surmised. He also remarked that he had the exact locality of capture well searched again, but without any success. A specimen of the true *A. helvetina* from Staudinger's collection was exhibited for comparison; it differed widely from the British examples.

Mr. H. T. Stainton said that he thought the specimens more resembled *N. xanthographa* than *N. augur*.

Mr. Stainton called attention to the fact that apparently all the larvæ of *Nematus ribesii* had died in their infancy this spring; the leaves of the currant-bushes had been riddled by the young larvæ, but he had not yet seen a single tree stripped.

Mr. R. M'Lachlan read "A revised list of British Trichoptera, brought down to date, and compiled with especial regard to the 'Catalogue of British Neuroptera' published by the Society in 1870." That catalogue included 136 species; 152 were now enumerated.

Mr. W. L. Distant read "Descriptions of new species and a new genus of *Cicadidæ* from Madagascar." He remarked that the distinct character of the Rhynchotal fauna of Madagascar was specially marked by the fact that every species of the widely distributed genus *Platypleura* received from that island was new to Science.

Mr. A. G. Butler communicated a continuation of the "Heterocerous Lepidoptera collected in Chili by Thomas Edmonds, Esq. Part III. Geometrites."—E. A. Fitch, *Hon. Sec.*

NOTICES OF NEW BOOKS.

The Birds of South Africa. By E. L. Layard. New Edition thoroughly revised and augmented by R. B. Sharpe. Part V., pp. 337—528. London: Quaritch. 1882.

We are glad to notice the issue of another part of this important work, which is announced to be completed in six parts.

It has been a considerable time in progress, but it is only fair to observe that considerable emendations and additions have been made to the original octavo volume of less than 400 pages which appeared in 1867.

Since Mr. Layard's book was written, much additional information has been collected by naturalists and travellers in South Africa respecting the birds of that vast region, which has resulted not only in the identification of numerous species not included in Mr. Layard's original list, but also in the rectification of the synonymy of species described by him, but then imperfectly known.

The part before us, with two coloured plates, includes the Flycatchers, Swallows, Shrikes, Starlings, Weaver Birds, Finches and Larks.

The scientific name of each species is printed in small capitals, preceded by a reference number, and followed by the English name of the bird; but why does the Editor give the name of the author or original describer of the species in some cases and omit it in others? In none of the Swallows, for example, do we find any authority given for the specific names employed. This is surely an oversight, and we think Mr. Sharpe should have gone a little further, and have given not only the authority for the name which he considers entitled to priority, but also a brief reference to the work in which the description under that name is to be found.

We notice here and there some variation in the orthography of the generic names, as compared with the first edition, which, at least in cases where it is not justifiable (as in Campophaga for Campephaga), must be attributed, we presume, to a slip of the pen or a typographical error.

It would, in our opinion, have added much to the value of the work had Mr. Sharpe given brief diagnoses of the generic characters at the head of each fresh genus. The Shrikes, for example, are grouped in no less than eleven different genera, *Lanius*, *Enneoctonus*, *Urolestes*, *Laniarius*, *Nilaus*, *Campephaga*, *Graucalus*, *Eurocephalus*, *Bradyornis*, *Prionops*, and *Sigmodus*, embracing as many as thirty-four species, and yet the collector of any one of these species is not furnished with any key to aid him in discovering to which particular genus his bird belongs. This omission, we think, is to be regretted, especially as the paragraphs suggested would have made but a slight addition to the cost of printing.

The ensuing part (the sixth) will complete the work, in which Mr. Sharpe proposes to include all the species of birds found in South Africa between the Cape Colony and Benguela on the west, and the Zambesi on the east coast, this country forming his *Subregio capensis*, and having natural boundaries. This is about double the area dealt with by Mr. Layard in his original work, and thus some idea may be formed of the labour bestowed by Mr. Sharpe in the preparation of this new edition.

Die Vögel der Zoologischen Gärten. Von Dr. Ant. Reichenow. 1st Part. Leipzig: 1882. 8vo, pp. xxx. and 278.

Dr. Reichenow has given to this Introduction to Ornithology the title of 'The Birds of the Zoological Gardens,' because his chief aim is to produce a work suitable for visitors to institutions which he looks upon as being even more instructive than museums. In accordance with this aim he gives an account of the characters of the several species which he mentions under each genus; desiring, at the same time, to avoid confusion, he has selected only such forms as are likely to be found in our vivaria. When we test our author so far, by comparing him with the list of animals exhibited in our own Zoological Gardens in London, we find that, if we select almost at random two cases, there have been here exhibited more species of the genus *Larus* than he enumerates, and just the same number of *Ocydromus;* perhaps the comparison is hardly a fair one, for, as the management of the Zoological Society is at present constituted, its Fellows and the public may any day be notified of the arrival of some rare and so-called unique specimen.

The first part of the work, which deals with what the author calls "Park-Vögel," is alone now before us; the second will treat of the smaller birds which can conveniently be kept in cages; this of course so far as Nature will allow of a somewhat arbitrary division.

As Dr. Reichenow adds on to forms likely to be obtained for zoological gardens an account of such genera as *Didus*, it will be seen that his work appeals to a sufficiently wide audience, and we have no doubt that there are some who will be glad to have a work of this kind. When, however, we look upon it as an introduction to Ornithology, for such it is also intended to be, we cannot say that it comes up to our standard. Were a youthful naturalist to go to a zoological garden with this work in his hand, and gain, as he can, from it a knowledge of the specific characters of some ten or fifteen species of the genus *Turtur* he would, we are confident, have got just the very kind of knowledge that he ought not to have. The accurate discrimination of species is the work of the specialist, who, however well Dr. Reichenow may here briefly define his forms, will be content with nothing less than personal manipulation and monographic revision. The young naturalist should try to gain a wide, though accurate, conception of what may be called the plan of ornithological structure, and this he can never work out for himself by the study of species and specific characters. Nor will he, we must add, be at all aided in any such attempt by the very unsatisfactory introduction which is to be found in this volume. An 'Introduction to Ornithology,' containing a general account of the anatomical structure, well illustrated by wood-cuts, followed by a sketch of the geographical distribution of birds, and an outline of their palæontological history, and having not much more than half its whole taken up by a history of the orders, families, and a certain number of well-selected genera, would be a very much better book for a commencing student; and, were we later to add on to this a manual of the Ornithology of one's own native land, we should be taking much more effectual steps for the production of a really scientific zoologist—of one, that is, who would be able to work in the narrowest groove and on the most minute questions, without being blinded, either in eye or mind, to wider problems or great general truths.

With only one volume before us we cannot say anything as to the classification which the author has adopted, but we feel bound to protest against the introduction, in a work of this kind, of the name of *Hippalectryo* in the place of our old friend *Casuarius*. If the present author is aiming at being a purist in zoological nomenclature he might, at least, have used *Ortalis* in place of the incorrect (accusative) form *Ortalida*.